Smart Campus

Sultan Al otaibi

Ali Al hussaini

Advisor: Dr. Elrabaa.

Outline

- Background.
- Motivation.
- Discussion outcome.
- Technical Requirements.
- Deployment
- To do list.

Project background

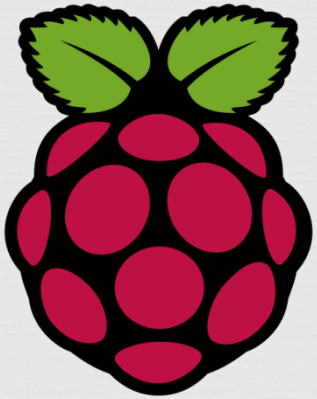
- To design a smart campus that has the following features:
  - Non-invasive.
  - Convenient.
  - To be Modular.
  - Efficient.
  - To implement one service as a prototype.

Motivation

- Motivation behind the project is to eliminate the following:
  - Wasted time, and thus money.
  - Human error.
  - Identity fraud.
  - Inconvenience.
  - Lack of real time information.

Discussion Outcome

- Team discussed the topic with advisor and decided on theses points:
  - Project must be scalable.
  - Utilize open architecture for the system.
  - To use OpenCV for image detection recognition.
  - Implement Auto-Attendance as a prototype service.
  - Use Raspberry pi as a node in each class room for prototyping (Potential final product).
  - Utilize SOA, XML , SOAP to communicate between services.




Made in the UK


OpenCV


XML

Technical requirements

- No false positives
- High detection Accuracy (at least 90%)
- Bandwidth efficient.
- Modularity.

Deployment

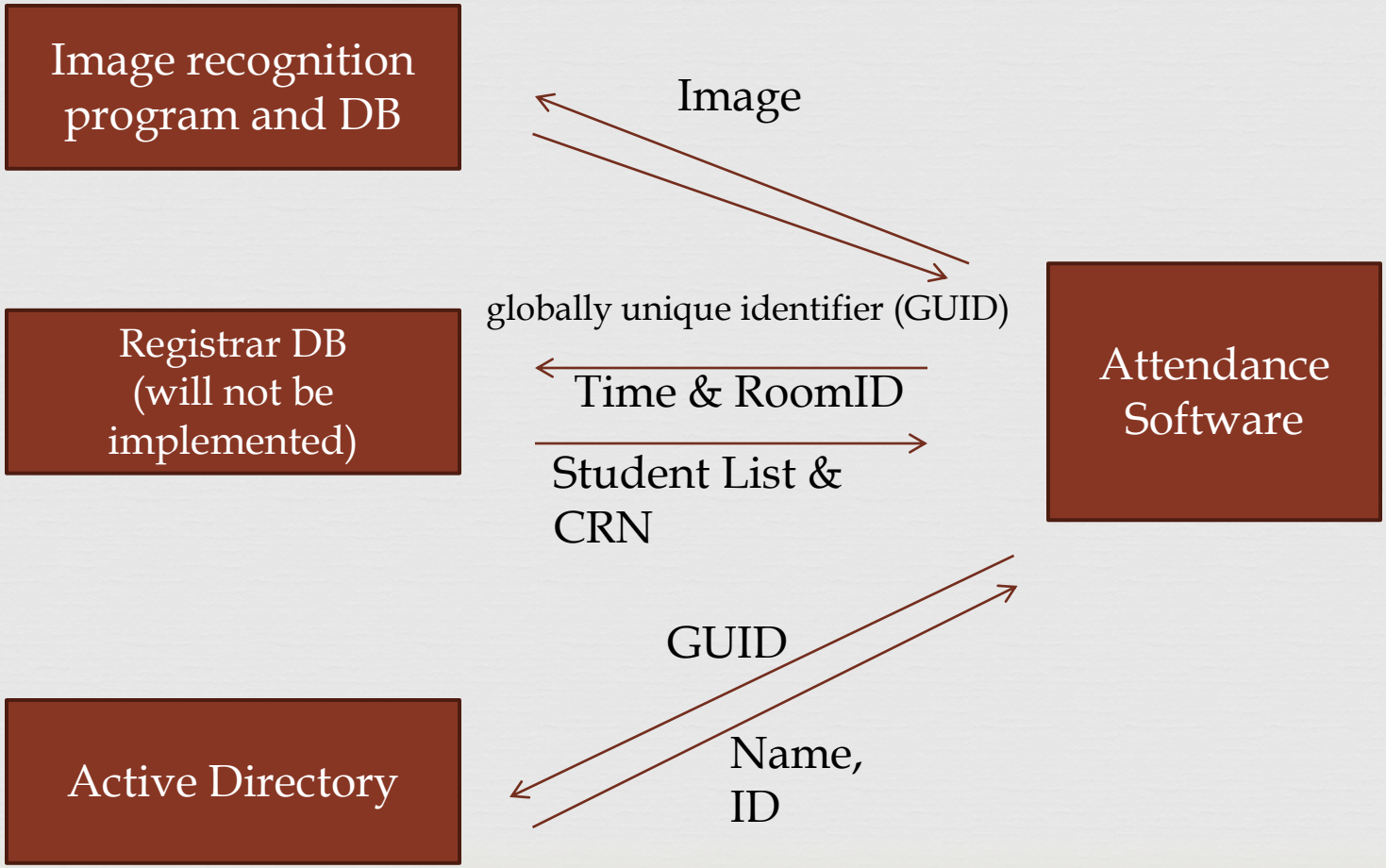


Image recognition program and DB
Image
globally unique identifier (GUID)
Registrar DB (will not be implemented)
Time & RoomID
Student List & CRN
Attendance Software
GUID
Name, ID
Active Directory

Deployment

- Attendance software
  - Request CRN & updated student list(suggested every 15 minuets)
  - Recognize faces then crops the faces
  - Send the faces to Image recognition
  - Receive GUID for students
  - Notifies instructor if a face is not identified
  - The instructor enters student id or ignores if its not a student
  - Save to DB

Deployment

- Image recognition
  - Recognizes faces and sends GUIDs
  - Sends error if image is not recognized
  - Accepts message + GUID for training.

TO DO

- Get familiar with the hardware
- Create the first prototype
- Work on the underlying architecture
- Modify the prototype and link it to the AD

Questions?

Thanks for your time.